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UTILITY PATENT APPLICATION TRANSMITTAL
(Large Entity)

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Docket No. NEC-F82/USA
Total Pages in this Submission

JC695 U.S. PTO 07/12/00

TO THE ASSISTANT COMMISSIONER FOR PATENTS
Box Patent Application
Washington, D.C. 20231

Transmitted herewith for filing under 35 U.S.C. 111(a) and 37 C.F.R. 1.53(b) is a new utility patent application for an invention entitled:

INFORMATION RETRIEVAL APPARATUS AND RECORDING MEDIUM HAVING AN INFORMATION RETRIEVAL PROGRAM RECORDED

jc542 U.S. PTO 09/614721 07/12/00

and invented by:

Katsushi Matsuda and Hajime Sugawa

If a CONTINUATION APPLICATION, *check appropriate box and supply the requisite information:*

☐ **Continuation** ☐ **Divisional** ☐ **Continuation-in-part (CIP)** of prior application No.: _____

Which is a:

☐ **Continuation** ☐ **Divisional** ☐ **Continuation-in-part (CIP)** of prior application No.: _____

Which is a:

☐ **Continuation** ☐ **Divisional** ☐ **Continuation-in-part (CIP)** of prior application No.: _____

Enclosed are:

Application Elements

1. ☐ Filing fee as calculated and transmitted as described below
2. ☒ Specification having 13 pages and including the following:
   - a. ☒ Descriptive Title of the Invention
   - b. ☐ Cross References to Related Applications *(if applicable)*
   - c. ☐ Statement Regarding Federally-sponsored Research/Development *(if applicable)*
   - d. ☐ Reference to Microfiche Appendix *(if applicable)*
   - e. ☒ Background of the Invention
   - f. ☒ Brief Summary of the Invention
   - g. ☒ Brief Description of the Drawings *(if drawings filed)*
   - h. ☒ Detailed Description
   - i. ☒ Claim(s) as Classified Below
   - j. ☒ Abstract of the Disclosure

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Application Elements (Continued)

3. ☒ Drawing(s) *(when necessary as prescribed by 35 USC 113)*

   a. ☒ Formal Number of Sheets 8

   b. ☐ Informal Number of Sheets

4. ☒ Oath or Declaration

   a. ☐ Newly executed *(original or copy)* ☒ Unexecuted

   b. ☐ Copy from a prior application (37 CFR 1.63(d)) *(for continuation/divisional application only)*

   c. ☒ With Power of Attorney ☐ Without Power of Attorney

   d. ☐ *DELETION OF INVENTOR(S)*
   Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. 1.63(d)(2) and 1.33(b).

5. ☐ Incorporation By Reference *(usable if Box 4b is checked)*
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

6. ☐ Computer Program in Microfiche *(Appendix)*

7. ☐ Nucleotide and/or Amino Acid Sequence Submission *(if applicable, all must be included)*

   a. ☐ Paper Copy

   b. ☐ Computer Readable Copy *(identical to computer copy)*

   c. ☐ Statement Verifying Identical Paper and Computer Readable Copy

Accompanying Application Parts

8. ☐ Assignment Papers *(cover sheet & document(s))*

9. ☐ 37 CFR 3.73(B) Statement *(when there is an assignee)*

10. ☐ English Translation Document *(if applicable)*

11. ☐ Information Disclosure Statement/PTO-1449 ☐ Copies of IDS Citations

12. ☐ Preliminary Amendment

13. ☒ Acknowledgment postcard

14. ☐ Certificate of Mailing

    ☐ First Class ☐ Express Mail *(Specify Label No.):* **HAND DELIVERED**

UTILITY PATENT APPLICATION TRANSMITTAL
(Large Entity)

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Docket No. NEC-F82/USA
Total Pages in this Submission

Accompanying Application Parts (Continued)

15. ☒ Certified Copy of Priority Document(s) *(if foreign priority is claimed)*

16. ☐ Additional Enclosures *(please identify below):*

Fee Calculation and Transmittal

CLAIMS AS FILED

For	#Filed	#Allowed	#Extra		Rate	Fee
Total Claims	7	- 20 =	0	x	$18.00	$0.00
Indep. Claims	2	- 3 =	0	x	$78.00	$0.00
Multiple Dependent Claims (check if applicable) ☐						$0.00
					BASIC FEE	$690.00
OTHER FEE *(specify purpose)* _____						$0.00
					TOTAL FILING FEE	$690.00

☐ A check in the amount of to cover the filing fee is enclosed.

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- ☐ Charge the amount of as filing fee.
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- ☐ Charge the issue fee set in 37 C.F.R. 1.18 at the mailing of the Notice of Allowance, pursuant to 37 C.F.R. 1.311(b).

Signature

Michael E. Whitham
Reg. No. 32,635

Dated: **July 12, 2000**

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RESTON, VIRGINIA 20191

APPLICATION
FOR
UNITED STATES
LETTERS PATENT

Applicants: Katsushi Matsuda and Hajime Sugawa
For: INFORMATION RETRIEVAL APPARATUS AND RECORDING MEDIUM HAVING AN INFORMATION RETRIEVAL PROGRAM RECORDED
Docket No.: NEC-F82/USA

INFORMATION RETRIEVAL APPARATUS AND RECORDING MEDIUM HAVING AN INFORMATION RETRIEVAL PROGRAM RECORDED

CROSS REFERENCE TO RELATED APPLICATIONS

The present invention claims priority from Japanese Patent Application No. 11-198820 filed July 13, 1999, the contents of which are incorporated herein by reference.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to an information retrieval apparatus capable of retrieving a document being in accord with a user's intention of retrieval and a recording medium having an information retrieval program recorded in it.

2. Description of Related Art

In recent years, necessary information is often retrieved and utilized by using an information retrieval service on the World Wide Web (WWW). However, since an information retrieval service being generally performed on WWW requires an information retrieval request represented by a combination of keywords, a beginner being unfamiliar with a computer cannot properly represent a combination of keywords for exactly representing the desired information, and therefore has difficulty in exactly retrieving the desired information. As a conventional technique for performing an exact information retrieval by extracting a retriever's intention in consideration of such a problem, there is an information retrieval apparatus disclosed in Japanese Patent Laid-Open Publication No.Hei 7-105,233 (hereinafter referred to as literature 1). The information retrieval apparatus disclosed in literature 1 extracts a retriever's intention by means of interaction between the retriever and the apparatus using a natural language in order to perform an exact retrieval.

The said information retrieval apparatus infers an inexplicit idiomatic expression or an abbreviated word being liable to be used in a natural language from the context of this interaction, and produces a retrieval request meeting the retriever's intention.

By the way, WWW has WWW pages each containing a collection of link destinations of a certain kind of information. A user can obtain a great amount of related information at a time by browsing these WWW pages, but since such pages are often made by gathering and arranging various information by hand, it is difficult to cover all the related information. Therefore, in case of desiring further information, a user needs to move to a page for retrieval and perform retrieval in consideration of its retrieval conditions. It is conceivable also to make a page for retrieval using the information retrieval apparatus disclosed in literature 1, but in such a case even if an inexplicit idiomatic expression or an abbreviated word is allowable, eventually a retriever results in being forced to input a natural language and in bearing a burden equivalent to or heavier than inputting keywords. And it is necessary to analyze in advance a sentence straightforwardly representing the content of a document to be retrieved and additionally it is necessary to prepare a concept dictionary at the information retrieval apparatus side, and therefore construction of such an apparatus requires such a great cost that it is not practical.

SUMMARY OF THE INVENTION

In consideration of the above-mentioned problems of the prior art, an object of the present invention is to provide an information retrieval apparatus capable of performing a retrieval of exact related information by a necessary minimum input in case of desiring further related information during browsing some retrieval objects such as WWW pages.

According to the present invention, an information retrieval apparatus

being provided with a data monitoring and content judging means for monitoring a sentence retrieved from a database and inferring a field which the said sentence belongs to, and a retrieval screen generating means for generating a retrieval screen for allowing a user to perform a retrieval operation taking the inferred field as an object of retrieval and outputting the retrieval screen as data to be displayed together with said retrieved sentence.

BRIEF DESCRIPTION OF THE DRAWINGS

Specific embodiments of the present invention will now be described, by way of examples only, with reference to the accompanying drawings in which:

Fig. 1 is a block diagram showing the composition of a first embodiment of the present invention,

Fig. 2 shows an example of a WWW document,

Fig. 3 shows an example of text data of a WWW document,

Fig. 4 shows an example of a template,

Fig. 5 shows another example of a template,

Fig. 6 shows an example of a WWW document by the template shown in Fig. 4,

Fig. 7 shows an example of a WWW document by the template shown in Fig. 5,

Fig. 8 is a block diagram showing the composition of a second embodiment of the present invention, and

Fig. 9 shows an example of text data of a WWW document.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to Fig. 1, this embodiment apparatus comprises an input/output device 100 capable of inputting a retrieval condition and the like and displaying a result of retrieval, a database 200 containing a sentence to be an object of retrieval, and an information retrieval apparatus 300 for providing an exact retrieval function meeting a retriever's intention. The database 200

may be a physically single database or may be a database being physically distributed but logically single. In Fig. 1, there is only one database 200 for convenience, but there may be a plurality of databases respectively distributed to plural sites on a network or the like. The information retrieval apparatus 300 is provided with a data monitoring portion 310 for monitoring data sent by the database 200 to the input/output device 100, said data being data of a sentence to be an object of retrieval requested by a user using the input/output device 100, a content judging portion 320 for identifying the kind of a content by referring to the content of the data and determining whether or not a retrieval screen is to be generated, and a retrieval screen generating portion 330 for generating a retrieval screen adaptive to the content.

Operation of this embodiment is described in detail. A user requests a sentence to be an object of retrieval from the database 200, using the input/output device 100. The database 200 communicates a sentence to be an object of retrieval requested by the user to the input/output device 100 through a network communication and the like. The data monitoring portion 310 of the information retrieval apparatus 300 monitors communication of the sentence to be an object of retrieval from this database 200 to the input/output device, obtains this sentence, and notifies the content judging portion 320 of this fact. The content judging portion 320 analyzes the content of this sentence and judges whether or not there is the possibility that the user requests retrieval. In case that the content judging portion 320 has judged that there is the possibility that the user requests a retrieval, the retrieval screen generating portion 330 sends data for retrieval to the input/output device 100. A retrieval screen generated by the retrieval screen-generating portion 330 has a function for performing retrieval on the database 200.

In this embodiment, since a retrieval screen capable of retrieving a sentence related to a sentence to be an object of retrieval spontaneously

requested by a user is generated and provided to the user, the user does not need to search another sentence to be an object of retrieval or input detailed retrieval conditions for the retrieval. Thanks to this, it is possible to reduce a burden of retrieval on the user to a necessary minimum.

This embodiment is described using a concrete example. In this example it is assumed that such WWW documents as HTML documents, XML documents and the like are kept in a database 200, and a user browses the said WWW documents through a browser on an input/output device.

Various HTML documents on the Internet are stored in the database 200. The form of storage in the database may be either a database form or a file form of a file system. Similarly to a conventional WWW technique, the database 200 does not need to be a single database but may be a plurality of databases respectively existing at different sites. And it may contain not only HTML documents but also structured documents such as XML (extensible Markup Language) documents, and other text documents. The database 200 holds these WWW documents. Through a browser operating on the input/output device 100, a user can browse these WWW documents, and browse different documents one after another by referring to links contained in these documents.

The browser on the input/output device 100 communicates with the database 200 through a network, and sends and receives a WWW document. A WWW document to be sent may be a reference of WWW documents of the database 200 or a retrieval request to the server of the database 200. A WWW document to be received is a WWW document itself of the database 200. However, it may be a WWW document originally existing in the database 200 or a WWW document dynamically produced by the server of the database 200.

Fig. 2 shows an example of a WWW document requested by a user. This example is a display example by a browser, and data actually sent from

the database 200 to the browser are text data as shown in Fig. 3. And Fig. 2 does not describe an interface portion standardly attached to a browser. The WWW document of Fig. 2 is a document describing present information, and a WWW document containing the content of an underlined part can be displayed by pressing the underlined hyperlink portion on the browser by means of an input device such as a mouse or the like. Since this point is the same as a conventional WWW technique, a person in this field can naturally understand this point.

Text data (Fig. 3) of a WWW document sent from the database 200 to the browser are monitored by the data monitoring portion 310. The information retrieval apparatus 300 is not limited to implementation by hardware but a browser having an information retrieval apparatus 300 embedded in it may monitor text data or a proxy server for relaying text data of a WWW document, said proxy server having an information retrieval apparatus 300 embedded in it, may monitor text data.

And data directed to a browser (actually a computer equipped with a browser) may be monitored by incorporating an information retrieval apparatus 300 into the software for monitoring text data of a WWW document.

When the data monitoring portion 310 knows that text data of a WWW document directed to a browser have been sent, the data monitoring portion 310 monitors and sends these data to the content judging portion 320. The content judging portion 320 infers from these data a field, which this WWW document belongs to. For example it infers that the WWW document of Fig. 3 belongs to a field of "present information". Objective fields to be inferred by the content judging portion 320 are limited in advance. For example, they may include "present information", "event information", "commodity catalog information", "paper invitation information" and the like. These objective fields are similar to a type described in literature 2 ("Type Classification and

Retrieval Using an Internet Multilateral Retrieval System OTROS-Structural Features", Information Processing Society of Japan, 57th National Convention Proceedings (3), pp.145-146, 1998). Inference of a field can be performed on the basis of a character string in text data of a WWW document and the number of links. Namely, whether or not it is "present information" is inferred on the basis of whether or not a character string of "present" is contained in the data and the number of links is equal to or greater than a fixed value (10 for example). Since an example of text data of a WWW document shown in Fig. 3 contains a character string of "present" and the number of links (part surrounded by tags <a> and) is 14, the content judging portion 320 judges that that document is "present information". A WWW document in these objective fields is a document which presents a collection of information in its field to a user and which is browsed first by the user desiring to know information of this field (said document being called a portal site). In case that a document does not belong to any of the fields limited in advance, the content judging portion 320 judges that the document is not a portal site and discards it.

In case of judging that a WWW document belongs to either of the objective fields, the content judging portion 320 notifies the retrieval screen-generating portion 330 of that field. For example, in case of text data of the WWW document of Fig. 3, the content judging portion 320 notifies the retrieval screen-generating portion 330 that this document is "present information". And when the content judging portion 320 cannot judge what objective field a WWW document belongs to, it ends hereupon the process of the information retrieval apparatus 300.

The retrieval screen-generating portion 330 generates a screen for retrieval using a template prepared in advance (Fig. 4). Items %1 and %3 vary depending upon objective fields, and for example in case of "present

information", they are displayed as shown in Fig. 5. Here it is assumed that a server of WWW for providing type retrieval described in literature 2 exists in a URL (Uniform Resource Locator) of "http://www.type.com/cgibin/type-search.cgi". The retrieval screen generating portion 330 embeds text data generated like Fig. 5 into data sent from the database 200 to a browser 150, namely, text data of a WWW document which is monitored by the data monitoring portion 310 and is judged as "present information" by the content judging portion 320. The data having a template embedded is sent to the browser in the same way as data sent to the browser by the database 200.

Fig. 7 shows an example of information displayed on the browser by the retrieval screen-generating portion 330 on the basis of the information sent to the browser. A screen to be originally displayed like Fig. 2 by the browser is modified like Fig. 6 by the information retrieval apparatus 300. Here a method in which the retrieval screen-generating portion 330 embeds a template into an original document is shown, but there is also a method of sending only a template to the browser as separate data without embedding the template. Fig. 7 shows a case where a template is not embedded but sent as separate data.

In case that an original document is insufficient in information, a user who has received such a retrieval screen can retrieve information similar to this document by only inputting its objective keywords in the retrieval screen.

A second embodiment of the present invention is described with reference to Fig. 9. In this embodiment, information of objective fields described in advance by a database maker or the like is stored in a database 200, the content judging portion 320 in the first embodiment is omitted from an information retrieval apparatus 300.

In this embodiment, a data monitoring portion 310 of the information retrieval apparatus 300 monitors communication of a WWW document from the

database 200 to a browser. The data-monitoring portion 310 takes the WWW document and notifies a retrieval screen-generating portion 330 of it. The retrieval screen-generating portion 330 takes the objective field information contained in this document and sends data for retrieval to the browser. A retrieval screen generated by the retrieval screen-generating portion 330 contains a means for performing an information retrieval on the database 200.

Since this embodiment generates and provides to a user a retrieval screen related to an applicable sentence on the basis of objective field information determined by a producer itself of sentences stored in the data base 200, it is not necessary for the user to search a retrievable sentence related to the applicable sentence or to input retrieval conditions in detail. This makes it possible to perform an exact retrieval while reducing a user's burden to a necessary minimum.

Next, operation of the second embodiment is described using a concrete example. Here, only points different from the first embodiment are described.

In this embodiment also, it is assumed that a WWW document as shown in Fig. 2 is sent from the database 200 to the browser in response to a user's request. Fig. 9 shows actual text data of the WWW document of Fig. 2. It is different from data of Fig. 3 of the first embodiment in that there is a comment line on the first line. In an HTML document, a portion which starts at <!-- and ends at --> is a comment portion and is not displayed on a browser. Other WWW documents also have the same comment function as this.

The data-monitoring portion 310 monitors text data to be sent from the database 200 to the browser 150. In case that there is a WWW document directed to the browser and a comment to indicate its objective field exists at the forefront of the text data, the data monitoring portion 310 does not send this data to the browser but sends it to the retrieval screen generating portion 330. A comment to indicate an objective field is a comment explicitly

indicating that an objective field is "present information" by "type=present" like the forefront comment line (<!--type=present-->) of Fig. 9. The data-monitoring portion 310 finds such a comment line. Such a method of indicating the objective field of a comment line is an example and is sufficient to have any form capable of being identified by a computer, and does not limit its form.

The data monitoring portion 310 sends an objective field extracted to the retrieval screen-generating portion 330. Like the first embodiment, the retrieval screen-generating portion 330 generates a retrieval screen using a template prepared in advance.

An information retrieval apparatus of the present invention can be realized by means of a computer by producing a computer program implementing the respective functions of the data monitoring portion 310, the content judging portion 320 and the retrieval screen generating portion 330 contained in the information retrieval apparatus 300, storing this computer program in a recording medium represented by a CD-ROM, a floppy disk or a semiconductor memory, and generating said respective functions on the computer by reading out this program from the recording medium having this program stored in it at the computer side. And this computer program may be an embodiment stored in storage inside a server, and may be an embodiment providing the program stored in this server through a network.

As described above, according to the present invention, it is possible to retrieve the same information as information currently browsed by a user, for example, information contained in a WWW document by inputting only keywords. The reason is that the present invention provides a retrieval function which automatically judges an objective field of a WWW document being currently browsed, automatically gives a retrieval screen limiting the objective field, and requires a user to input only keywords.

WHAT IS CLAIMED IS:

1. An information retrieval apparatus comprising;

a data monitoring and content judging means for monitoring a sentence retrieved from a database and inferring a field which this sentence belongs to, and

a retrieval screen generating means for generating a retrieval screen for a user to perform a retrieval operation taking the inferred field as an object of retrieval and outputting the retrieval screen as data to be displayed together with said retrieved sentence.

2. An information retrieval apparatus according to claim 1, wherein;

a sentence retrieved from said database is a structured sentence, and

said retrieval screen is a screen of a structured sentence in which screen a retrieval part is embedded in the retrieved structured sentence and a user can retrieve.

3. An information retrieval apparatus according to claim 1, wherein;

a sentence retrieved from said database is a structured sentence, and

said retrieval screen is a screen of a structured sentence in which a retrieval part is separate from the retrieved structured sentence and a user can retrieve.

4. An information retrieval apparatus according to claim 1, wherein;

output of said retrieval screen generating means is supplied to an input/output means for retrieving and displaying a sentence stored in said database, and

said input/output means displays a retrieval screen outputted by said retrieval screen generating means and retrieves again another sentence stored

in said database by a retrieval operation performed by a user according to this retrieval screen.

5. An information retrieval apparatus according to claim 1, wherein;

a sentence retrieved from said database is a structured sentence, and

said data monitoring and content judging means infers a field which the structured sentence belongs to, using as a criterion of judgement either one or both of the content of text data contained in the structured sentence and the number of links.

6. An information retrieval apparatus according to claim 1, wherein;

a sentence retrieved from said database is given in advance the information for identifying its field, and

said data monitoring and content judging means notifies said retrieval screen generating means of a field represented by said identifying information.

7. A recording medium having an information retrieval program stored in it, said program making a computer realize a data monitoring and content judging function for monitoring the content of a sentence retrieved by an input/output device capable of retrieving a sentence stored in a database and for inferring a field which said sentence belongs to, and a retrieval screen generating function for generating a retrieval function taking the inferred field as an object of retrieval and providing the retrieval function generated to said input/output device.

ABSTRACT OF THE DISCLOSURE

The invention analyzes a character string and link information of a WWW page being currently browsed, infers that the said page is a page having a collection of information of a certain kind, namely, an objective field such as present information, event information or the like, and embeds into this page a function of performing a retrieval limited to the inferred objective field. A user performs a limited retrieval using the retrieval function and obtains other information of the said objective field.

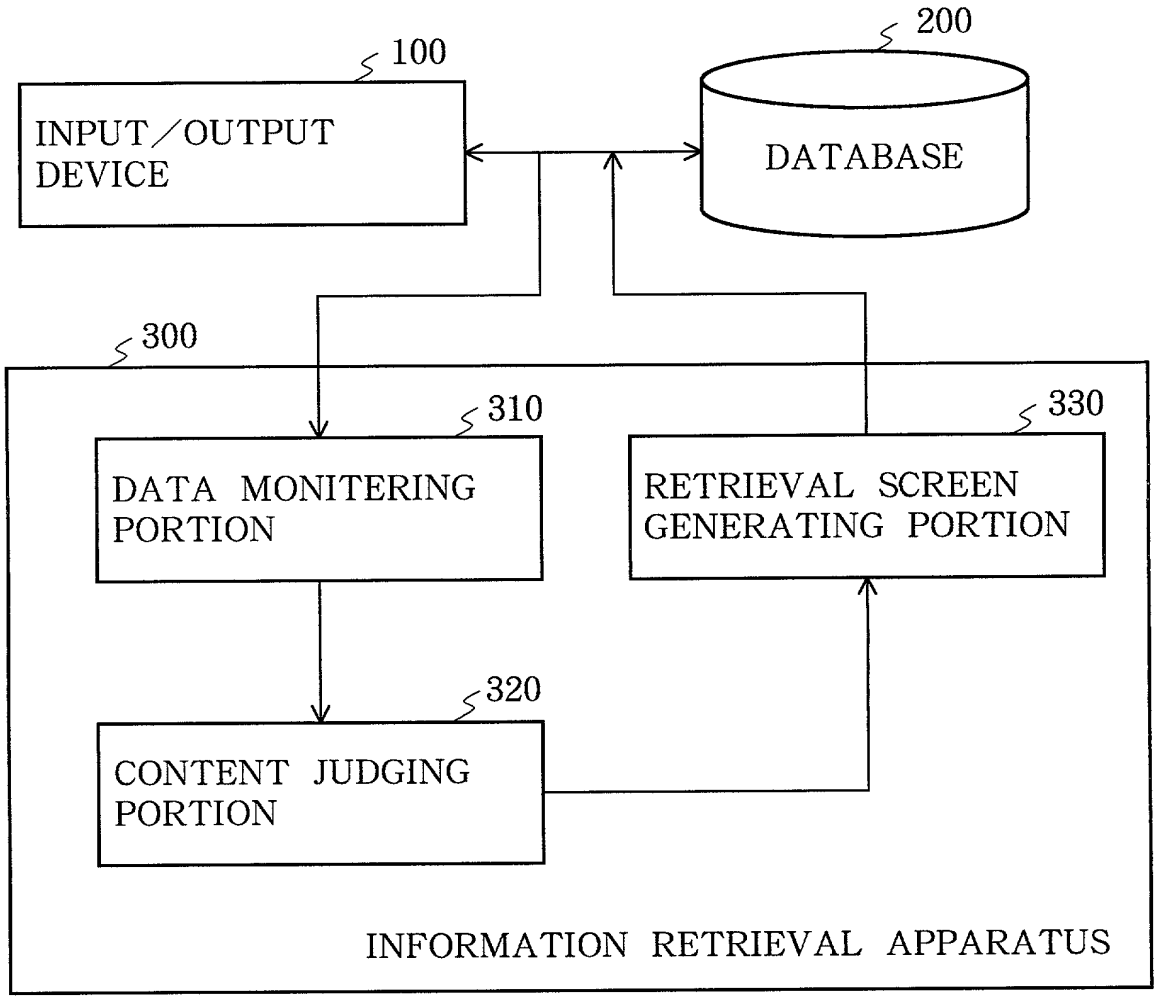
100
INPUT/OUTPUT DEVICE
200
DATABASE
300
310
DATA MONITERING PORTION
330
RETRIEVAL SCREEN GENERATING PORTION
320
CONTENT JUDGING PORTION
INFORMATION RETRIEVAL APPARATUS

FIG.1

The Great Devil of Presents

Home Page of Present Information by the Great Devil of Presents who is a friend of everyone

Get Thousand Dollar Worth of Gorgeous Goods

Buy a ... to go to a Round-The-World Trip
Win a new vihicle of ...

Get Thousand Dollar Worth of Gorgeous Goods

ABC coffee is presenting 100th anniversary goods
Win ..., for a hundred persons by registering with a free mail magagine a questionnaire about internet service providers
Get ... Goods by answering a quiz

Many a little makes a mickle

What! Five Dollar Worth of Book Prepaid Cards for Five Hundred Persons
Beer Prepaid Card for Everyone who would buy 30 bottles of ... beer
On-Line Shopping of the ... Company
Get a ... by answering a questionnaire

Many a little makes a litter

Dole available
Broken Vacuum Bottle available
Cursed VTR

FIG.2

```
<html><head><title>The Great Devil of Presents</title></head>
<bodybgcolor="#FFFFF">
<p align="center"><img src="present_devil.gif" width="500" height="100">
</p>
<p align="center">Home Page of Present Information by the Great Devil of
 Presents who is a friend of everyone</p>
<hr>
<div align="center"><center>
<table border="0" cellpadding="5"cellspacing="6"width="100%">
<tr>
 <td valign="top">Get Thousand Dollar Worth of Gorgeous Goods<blockquote
>
  <a href="http://a.b.c/a.htm">Buy a ... to go to a Round-The-World Trip
</a><br>
  <a href="http://d.e.f/d.htm">Win a new vihicle of ...</a>
  </blockquote></td>
 <td valign="top">Get Thousand Dollar Worth of Gorgeous Goods<blockquote
>
  <a href="http://g.h.i/g.htm">ABC coffee is presenting 100th
anniversary goods</a><br>
  <a href="http://j.k.l/j.htm">Win ..., for a hundred persons</a><br>
  <a href="http://m.n.o/m.htm">by registering with a free mail magagine<
/a><br>
  <a href="http://p.q.r/p.htm">a questionnaire about internet service
providers</a><br>
  <a href="http://s.t.u/s.htm">Get ... Goods by answering a quiz</a>
  </blockquote></td></tr>
<tr>
 <td valign="top">Many a little makes a mickle<blockquote>
  <a href="a.htm">What! Five Dollar Worth of Book Prepaid Cards for Five
 Hundred Persons</a><br>
  <a href="a.htm">Beer Prepaid Card for Everyone who would buy 30
bottles of ... beer</a><br>
  <a href="a.htm">On-Line Shopping of the ... Company</a><br>
  <a href="a.htm">Get a ... by answering a questionnaire</a><br>
  </blockquote></td>
 <td valign="top">Many a little makes a litter<blockquote>
  <a href="a.htm">Dole available</a><br>
  <a href="a.htm">Broken Vacuum Bottle available</a><br>
  <a href="a.htm">Cursed VTR</a>
  </blockquote></td></tr>
</table>
</center></div>
</body></html>
```

FIG.3

```
< center >% 1 < center >
< form  action ="http :／／www.type.com／cgi − bin／type__serch.cgi ?
type =% 2"  >
I  % 3 < input  type ="text"   size ="25"   maxlength ="200"   name ="
keyword"   value =" "  >
< input  type ="submit"   value ="retrieve"  >
<／form >
```

FIG.4


```
< center > prize  searching  on  your  inconvenience < center >
< form  action ="http :／／www.type.com／cgi − bin／type__serch.cgi ?
type =% 2"  >
I  hope  to  get  < input  type ="text"   size ="25"   maxlength ="200"   name
="keyword"   value =" "  >
< input  type ="submit"   value ="retrieve"  >
<／form >
```

FIG.5

The Great Devil of Presents

Home Page of Present Information by the Great Devil of Presents who is a friend of everyone

---

Get Thousand Dollar Worth of Gorgeous Goods

Buy a ... to go to a Round-The-World Trip
Win a new vihicle of ...

Get Thousand Dollar Worth of Gorgeous Goods

ABC coffee is presenting 100th anniversary goods
Win ..., for a hundred persons by registering with a free mail magagine a questionnaire about internet service providers
Get ... Goods by answering a quiz

Many a little makes a mickle

What! Five Dollar Worth of Book Prepaid Cards for Five Hundred Persons
Beer Prepaid Card for Everyone who would buy 30 bottles of ... beer
On-Line Shopping of the ... Company
Get a ... by answering a questionnaire

Many a little makes a litter

Dole available
Broken Vacuum Bottle available
Cursed VTR

prize searching on your feeling of any inconvenience

I hope to get [ ] retrieve

FIG.6

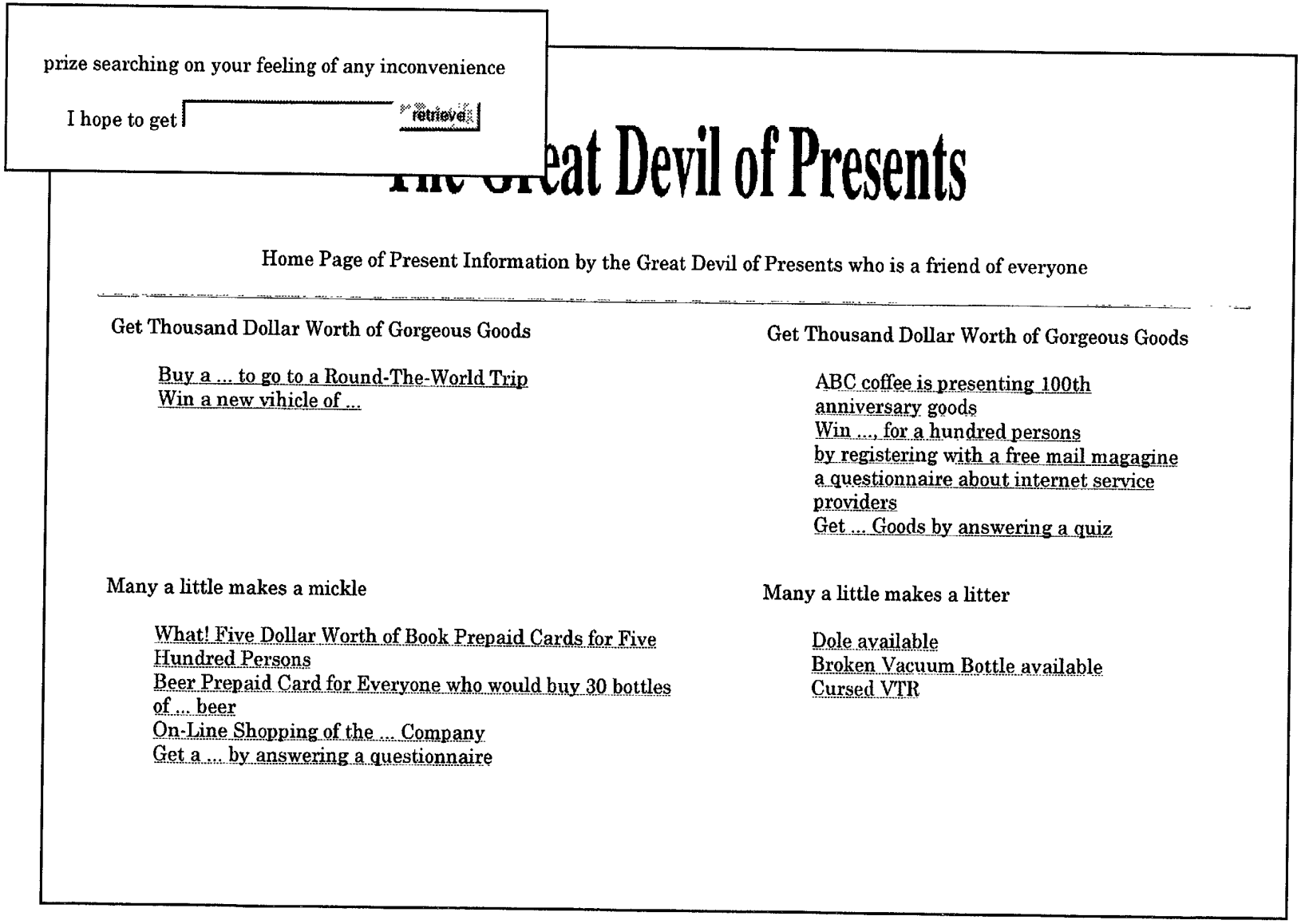
prize searching on your feeling of any inconvenience
I hope to get
retrieve
The Great Devil of Presents
Home Page of Present Information by the Great Devil of Presents who is a friend of everyone
Get Thousand Dollar Worth of Gorgeous Goods
Buy a ... to go to a Round-The-World Trip
Win a new vihicle of ...
Get Thousand Dollar Worth of Gorgeous Goods
ABC coffee is presenting 100th anniversary goods
Win ..., for a hundred persons by registering with a free mail magagine
a questionnaire about internet service providers
Get ... Goods by answering a quiz
Many a little makes a mickle
What! Five Dollar Worth of Book Prepaid Cards for Five Hundred Persons
Beer Prepaid Card for Everyone who would buy 30 bottles of ... beer
On-Line Shopping of the ... Company
Get a ... by answering a questionnaire
Many a little makes a litter
Dole available
Broken Vacuum Bottle available
Cursed VTR

FIG.7

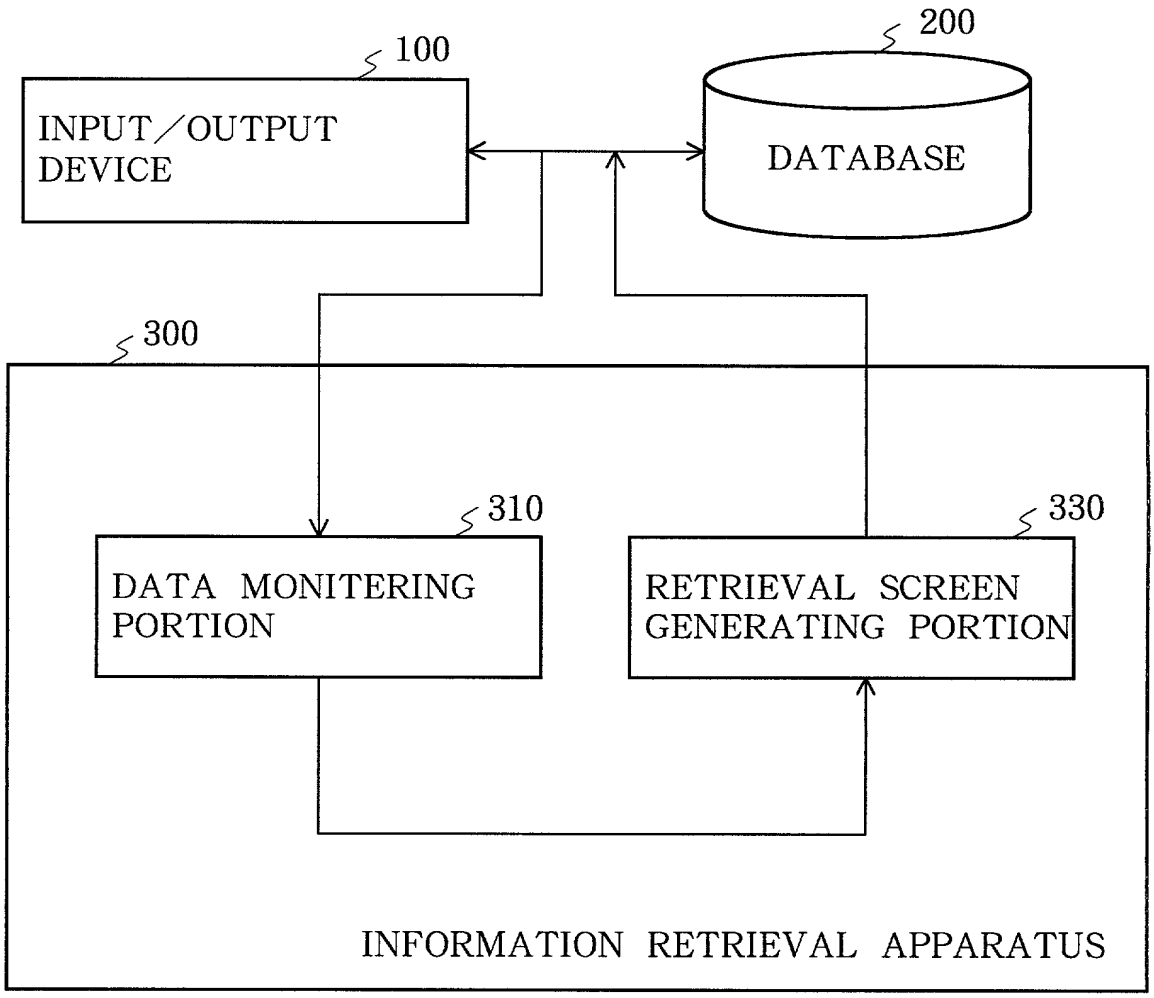
100
INPUT/OUTPUT DEVICE
200
DATABASE
300
310
DATA MONITERING PORTION
330
RETRIEVAL SCREEN GENERATING PORTION
INFORMATION RETRIEVAL APPARATUS

FIG.8

```
<!--type=present-->
<html><head><title>The Great Devil of Presents</title></head>
<bodybgcolor="#FFFFF">
<palign="center"><img src="present_devil.gif" width="500" height="100">
</p>
<palign="center">Home Page of Present Information by the Great Devil of
 Presents who is a friend of everyone</p>
<hr>
<div align="center"><center>
<table border="0" cellpadding="5"cellspacing="6"width="100%">
<tr>
 <td valign="top">Get Thousand Dollar Worth of Gorgeous Goods<
blockquote>
  <a href="http://a.b.c/a.htm">Buy a ... to go to a Round-The-World
Trip</a><br>
  <a href="http://d.e.f/d.htm">Win a new vihicle of ...</a>
  </blockquote></td>
 <td valign="top">Get Thousand Dollar Worth of Gorgeous Goods<
blockquote>
  <a href="http://g.h.i/g.htm">ABC coffee is presenting 100th
anniversary goods</a><br>
  <a href="http://j.k.l/j.htm">Win ..., for a hundred persons</a><br>
  <a href="http://m.n.o/m.htm">by registering with a free mail magagine
</a><br>
  <a href="http://p.q.r/p.htm">a questionnaire about internet service
providers</a><br>
  <a href="http://s.t.u/s.htm">Get ... Goods by answering a quiz</a>
  </blockquote></td></tr>
<tr>
 <td valign="top">Many a little makes a mickle<blockquote>
  <a href="a.htm">What! Five Dollar Worth of Book Prepaid Cards for
Five Hundred Persons</a><br>
  <a href="a.htm">Beer Prepaid Card for Everyone who would buy 30
bottles of ... beer</a><br>
  <a href="a.htm">On-Line Shopping of the ... Company</a><br>
  <a href="a.htm">Get a ... by answering a questionnaire</a><br>
  </blockquote></td>
 <td valign="top">Many a little makes a litter<blockquote>
  <a href="a.htm">Dole available</a><br>
  <a href="a.htm">Broken Vacuum Bottle available</a><br>
  <a href="a.htm">Cursed VTR</a>
  </blockquote></td></tr>
</table>
</center></div>
</body></html>
```

FIG.9

Application for United States Patent

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

INFORMATION RETRIEVAL APPARATUS AND RECORDING MEDIUM HAVING AN INFORMATION RETRIEVAL PROGRAM RECORDED

the specification of which:

(check one)

☒ is attached hereto

☐ was filed on_____, as
Application Serial No._____
and was amended on_____.
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, § 1.56*

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			priority claimed
11-198820	Japan	13/07/1999	X yes ___ no
(Number)	(Country)	(Day/Month/Year Filed)	
_____	_____	_____	___ yes ___ no
(Number)	(Country)	(Day/Month/Year Filed)	
_____	_____	_____	___ yes ___ no
(Number)	(Country)	(Day/Month/Year Filed)	

I hereby claim the benefit under Title 35, United States Code, § 119 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

_____	_____	_____
(Application Serial No.)	(Filing Date)	(Status: patented, pending, abandoned)

Power of Attorney: As a named inventor, I hereby appoint C. Lamont Whitham, Reg. No. 22,424, Marshall M. Curtis, Reg. No. 33,138 and Michael E. Whitham, Reg. No. 32,635 as attorneys and/or agents to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. All correspondence should be directed to McGuire, Woods, Battle & Boothe, LLP, Reston International Center, 11800 Sunrise Valley Dr., Suite 900, Reston, Virginia 20191. Telephone calls should be directed to McGuire, Woods, Battle & Boothe, LLP at (703) 391-2510.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Sole
or First Inventor: Katsushi Matsuda

Inventor's Signature _____ Date: _____

Residence: Tokyo, Japan

Citizenship: Japan

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Inventor's Signature _____ Date: _____

Residence: Tokyo, Japan

Citizenship: Japan

Post Office Address: c/o NEC Corporation, 7-1, Shiba 5-chome, Minato-ku, Tokyo, Japan

*Title 37, Code of Federal Regulations, § 1.56:

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith toward the Patent and Trademark Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and (1) it establishes , by itself or in combination with other information, a prima facie case of unpatentability; or (2) it refutes, or is inconsistent with, a position the applicant takes in: (i) opposing an argument of unpatentability relied on by the Office, or (ii) asserting an argument of patentability.